

### **REMARKS**

Favorable reconsideration of the application is respectfully requested in light of the amendments and remarks herein.

Upon entry of this amendment, claims 1-13 will be pending. By this amendment, claims 1, 5-6, and 10-12 have been amended, and new claim 13 has been added.

#### **Objection to Claims 1, 5-6, and 10-12**

In Section 1 of the Office Action, the Examiner has objected to claims 1, 5-6, and 10-12 for informalities. Specifically, the Examiner objects that the phrase “most likelihood method” should be --maximum likelihood method-- and the phrase “complex statistic method” should be --mixed statistic method--. In the Specification at page 26, it is made clear that these phrases are interchangeable: “... by means of a most (maximum) likelihood method, a complex (mixed) statistic method, ...” While the phrases in claims 1, 5-6, and 10-12 have been amended according to the Examiner’s request, it is noted that these amendments are only clarifications. Having made the requested changes, it is respectfully requested that this objection be withdrawn.

#### **§102 Rejection of Claims 1, 4, 5, 8, and 10-12**

In Section 3 of the Office Action, the Examiner has rejected claims 1, 4, 5, 8, and 10-12 under 35 U.S.C. §102(b) as being unpatentable over Matsui et al. (U.S. Patent 5,835,890; hereinafter referred to as “Matsui”). This rejection is respectfully traversed below.

Regarding claim 1, as shown above, claim 1 has been amended and calls for:

1. (Currently Amended) A model adaptation apparatus for adapting a model used in pattern recognition in which input data in the form of a time series is classified into one of a predetermined number of models, said apparatus comprising:

data extraction means for extracting input data corresponding to a predetermined model, observed during a predetermined interval, and then outputting the extracted data; and

a model adaptation means for adapting said predetermined model using said data extracted during said predetermined interval by means of one of the maximum likelihood method, the mixed statistic method, and the minimum distance-maximum separation theorem;

wherein said model adaptation means adapts an acoustic model for ambient noise during a noise observation interval that ends when a speech switch is turned on when a user starts speech.

Accordingly, in amended claim 1, the model adaptation means adapts an acoustic model for ambient noise during a noise observation interval. The noise observation interval ends when a speech switch is turned when a user starts speech. (See Figure 2, pages 9-10 of the Specification.)

Claim 1 has been amended and the Examiner's arguments presented in rejecting claim 1 in Section 4 of the Office Action do not appear to apply to amended claim 1. It does not appear that these arguments address model adaptation means as called for in claim 1. For example, in claim 1, the model adaptation means adapts an acoustic model for ambient noise during a noise observation interval.

Accordingly, it does not appear that the Examiner has established how Matsui, as referenced by the Examiner in rejecting claim 1, shows or suggests at least these aspects of amended claim 1, and so it is submitted that the Examiner has not established how Matsui shows or suggests amended claim 1 as a whole. Claims 4, 5, and 8 depend from claim 1, and it is also

submitted that the Examiner has not established how Matsui shows or suggests claims 4, 5, and 8, through their dependence on claim 1. Similar arguments apply to claims 10-12.

Based upon the foregoing, it is submitted that claims 1, 4, 5, 8, and 10-12 are not anticipated by nor rendered obvious by the teachings of Matsui, as presented and referenced by the Examiner. Accordingly, it is submitted that the Examiner's rejection of claims 1, 4, 5, 8, and 10-12 based upon 35 U.S.C. §102(b) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

#### §103 Rejection of Claims 2 and 3

In Section 12 of the Office Action, the Examiner has rejected claims 2 and 3 under 35 U.S.C. §103(a) as being unpatentable over Matsui et al. (U.S. Patent 5,835,890; hereinafter referred to as "Matsui") in view of Rao et al. (U.S. Patent 5,978,760; hereinafter referred to as "Rao"). This rejection is respectfully traversed below.

Claims 2 and 3 depend from claim 1. As discussed above, it is submitted that the rejection of claim 1 has been overcome. Therefore, it is respectfully submitted that the rejection of claims 2 and 3 has also been overcome through the dependence of claims 2 and 3 on claim 1.

Based upon the foregoing, it is submitted that claims 2 and 3 are not anticipated by nor rendered obvious by the teachings of Matsui and Rao, as presented and referenced by the Examiner. Accordingly, it is submitted that the Examiner's rejection of claims 2 and 3 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

§103 Rejection of Claim 6

In Section 13 of the Office Action, the Examiner has rejected claim 6 under 35 U.S.C. §103(a) as being unpatentable over Matsui et al. (U.S. Patent 5,835,890; hereinafter referred to as “Matsui”). This rejection is respectfully traversed below.

Claim 6 depends from claim 1. As discussed above, it is submitted that the rejection of claim 1 has been overcome. Therefore, it is respectfully submitted that the rejection of claim 6 has also been overcome through the dependence of claim 6 on claim 1.

Based upon the foregoing, it is submitted that claim 6 is not anticipated by nor rendered obvious by the teachings of Matsui, as presented and referenced by the Examiner. Accordingly, it is submitted that the Examiner’s rejection of claim 6 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

§103 Rejection of Claim 7

In Section 14 of the Office Action, the Examiner has rejected claim 7 under 35 U.S.C. §103(a) as being unpatentable over Matsui et al. (U.S. Patent 5,835,890; hereinafter referred to as “Matsui”) in view of Komori et al. (U.S. Patent 6,108,628; hereinafter referred to as “Komori”). This rejection is respectfully traversed below.

Claim 7 depends from claim 1. As discussed above, it is submitted that the rejection of claim 1 has been overcome. Therefore, it is respectfully submitted that the rejection of claim 7 has also been overcome through the dependence of claim 7 on claim 1.

Based upon the foregoing, it is submitted that claim 7 is not anticipated by nor rendered obvious by the teachings of Matsui and Komori, as presented and referenced by the Examiner. Accordingly, it is submitted that the Examiner’s rejection of claim 7 based upon 35 U.S.C.

§103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

#### §103 Rejection of Claim 9

In Section 15 of the Office Action, the Examiner has rejected claim 9 under 35 U.S.C. §103(a) as being unpatentable over Matsui et al. (U.S. Patent 5,835,890; hereinafter referred to as “Matsui”) in view of McKinley et al. (*Noise Model Adaptation in Model Based Speech Enhancement*; hereinafter referred to as “McKinley”). This rejection is respectfully traversed below.

Claim 9 depends from claim 1. As discussed above, it is submitted that the rejection of claim 1 has been overcome. Therefore, it is respectfully submitted that the rejection of claim 9 has also been overcome through the dependence of claim 9 on claim 1.

Based upon the foregoing, it is submitted that claim 9 is not anticipated by nor rendered obvious by the teachings of Matsui and McKinley, as presented and referenced by the Examiner. Accordingly, it is submitted that the Examiner’s rejection of claim 9 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

#### New Claims

New claim 13 depends from claim 1. As discussed above, it is submitted that the rejection of claim 1 has been overcome. Therefore, it is submitted that claim 13 should be allowable.

**CONCLUSION**

In view of the foregoing, entry of this amendment, and the allowance of this application with claims 1-13 is respectfully solicited.

In regard to the claims amended herein and throughout the prosecution of this application, it is submitted that these claims, as originally presented, are patentably distinct over the prior art of record, and that these claims were in full compliance with the requirements of 35 U.S.C. §112. Changes to these claims, as presented herein, are not made for the purpose of patentability within the meaning of 35 U.S.C. §§101, 102, 103 or 112. Rather, these changes are made simply for clarification and to round out the scope of protection to which Applicants are entitled.


In the event that additional cooperation in this case may be helpful to complete its prosecution, the Examiner is cordially invited to contact Applicants' representative at the telephone number written below.

The Commissioner is hereby authorized to charge any insufficient fees or credit any overpayment associated with the above-identified application to Deposit Account 50-0320.

Respectfully submitted,

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